Cromemco Software Update Service Note 68000 Cromix-2

Date: October 20, 1982

Product: CRO-DL and CRO-DS

Release: 2

Date production of this version began: Oct. 11, 1982 on 8"
Oct. 11, 1982 on 5"

First serial number with this version: 2-10000 on 8"
2-10000 on 5"

SUMMARY

Version 20.09 of the 68000 Cromix™ Operating System is now available. Several problems found in the initial release have been fixed. Please refer to the 68000 Cromix Suds Note-1 (part number 023-9548) for a full description of the D-series Cromix Operating System.

CORRECTIONS

1. When **.bin** files generated from 68000 source code were loaded, the Cromix Operating System did not check to see if sufficient memory was available to hold the module. If the **.bin** file was too large, it would overrun the top of user memory, causing vectored interrupts. Also random characters would be sent to the terminal.

   The current version now correctly loads modules of any size. If a program is too big to fit in available memory, the message **All memory in use.** appears on the screen.

   The amount of memory a 68000 executable module requires may be determined by giving the command:

   ```
   dump filename.bin
   ```

   The four bytes at location 08h, 09h 0Ah, and 0Bh of the dump display indicate the amount of memory in hexadecimal needed for this module. Location 08h is the high order byte, and location 0Bh is the low order byte.

2. In cases where more than one module was running in a 64K block of memory, the scheduler was not initializing the pointer at locations 6 and 7 of that block as the modules were time sliced in and out. Correct initialization occurred when programs were first loaded and run. However, when already resident modules began execution during their second time slice, the scheduler would not update locations 6 and 7 for them. The values would be correct only for the most recently loaded module. If this module was not executing and the running module used the value at 6 and 7, a vector interrupt error could occur, hanging the system.

   This has been fixed, and any mix of RB and non-RB modules may be loaded and run, up to the limits of memory or until 18 processes are running concurrently.

3. Terminals on quadarts would not allow a user to log in on a name that was password protected. When given either the correct or an incorrect password, **Name or Password incorrect.** was displayed. This problem is corrected in the current version.

4. If 68000 programs were doing terminal I/O and CONTROL-S was entered followed by CONTROL-C, a normal abort might not occur. In some cases, random characters were sent to the screen before the system prompt was displayed. In cases where a FORTRAN-77 or Pascal program was executing, a runtime error was often generated before the programmed aborted.

   This occurred when CONTROL-C was entered while a system call was executing. This has been fixed, and programs now exit properly when CONTROL-C is entered.

5. For terminals using the TU-ART drivers, if Mode WRAP was set and the Mode WIDTH specification was exceeded before entering a RETURN, when the RETURN was entered, the system would lock up. Terminals on Quadarts did not exhibit this problem.

   The current version corrects this error.

6. Though much of the 68000 Cromix Operating System uses routines from Cromix version 11.11, **iolib.rel** in the **/gen** directory of the 68000 Cromix Operating System is not at all compatible with the similarly named module in Cromix version 11.11. The Crogen68 utility must use the **iolib.rel** shipped on the 68000 Cromix version 20.09 system diskette.

NEW SOFTWARE

INIT version 2.77

The motor-on delay for floppies has been changed to 2.4 seconds, for increased reliability. When used under the Cromix Operating System to initialize a hard disk in CDOS format, Version 2.76 would place the directory label incorrectly. This problem has been fixed. However, Init does not write the CDOS bitmap back to the hard disk. This means that the Stat utility must be run under CDOS to correct the bitmap on the hard disk **before** any other programs are run.

HARDWARE CONSIDERATIONS

When a 68000 system is turned on, the error light on the MCU is on. This does not necessarily mean that a memory error has occurred. To turn the light off, type the command

```
ecc on or
logerr nn &
```

The light remains off unless a memory error occurs or the system is turned off and on again.

Normally if error checking has been enabled and the light is on, a memory error has occurred. Type the command

```
ecc -e
```

to display a description of the memory error on the terminal. This command also turns off the MCU error light.

This light may be on for two different reasons: the user who sees the MCU light on may be seeing a computer with a memory error or a computer that has just been turned on.

One way to turn off the error light automatically upon booting is to edit the **startup.cmd** file to include the command:

```
ecc on >* /dev/null
```

By the time the Login message is displayed on the console, the MCU light should be off, even if the system was just

powered up. The redirection of console output to the null device prevents the message **Error correcting memory is turned on** from being displayed within the sequence of boot messages.

With error checking enabled, the computer user should always suspect that a memory error has occurred if this light is on.

A small disadvantage to having ECC enabled is that an extra wait state is required for each memory reference. This slows program execution slightly. If this is undesirable, disable error checking by typing the command

```
ecc off
```

VERSION NUMBER SUMMARY

Files in /	**Version**	
cromix.iop.sys	20.09	-new-
cromix.sys	20.09	-new-

Files in /bin	**Version**	
access.bin	00.06	
backup.bin	00.08	
blink.bin	00.13	
boot.bin	00.02	
cdoscopy.bin	00.15	
chowner.bin	00.06	
cmpasc.bin	00.05	
compare.bin	00.07	
copy.bin	00.10	
cptree.bin	00.07	
day.bin	01.02	
dcheck.bin	00.12	
deltree.bin	00.03	
dump.bin	00.10	
ecc.bin	00.02	
echo.bin	00.05	
ed.bin	01.35	
find.bin	00.07	
free.bin	00.09	
group.bin	00.01	
h.bin	00.04	
help.bin	00.04	
icheck.bin	00.15	
idump.bin	00.06	
init.com	02.77	-new-
input.bin	01.00	
l.bin	00.11	

mail.bin	00.06
makdev.bin	00.07
makfs.bin	00.13
maklink.bin	00.04
match.bin	00.03
mode.bin	01.12
mount.bin	00.13
move.bin	00.09
msg.bin	00.08
ncheck.bin	00.09
passwd.bin	00.09
patch.bin	00.03
priv.bin	00.07
restore.bin	00.05
root.bin	00.02
screen.bin	01.35
sim.bin	00.34
sort.bin	00.06
spool.bin	00.12
tee.bin	01.02
testinp.bin	01.01
time.bin	00.07
unmount.bin	00.11
usage.bin	00.06
version.bin	00.09
wboot.bin	00.09
who.bin	00.06

Files in /dev	**Version**
iop/cromix.iop	11.11
iop/ioprun.bin	03.00

Files in /etc	**Version**
fdboot	00.09
login.bin	00.02
sfdboot	00.09

Files in /gen	**Version**
crogen68.bin	00.00
default.bin	00.01